

Masterpact® circuit breaker introduction

interrupting ratings

UL489/NEMA AB1 type	rating (A)	480V	600V	short time
standard interrupting rating				
MP08 H1	800	65kA	65kA	50kA
MP12 H1	1200	65kA	65kA	50kA
MP16 H1	1600	65kA	65kA	50kA
MP20 H1	2000	75kA	75kA	75kA
MP25 H1	2500	75kA	75kA	75kA
MP30 H1	3000	75kA	75kA	75kA
MP40 H1	4000	100kA	100kA	100kA
MP50 H1	5000	100kA	100kA	100kA
MP63 H1	6300 ①	100kA	100kA	100kA
high interrupting rating				
MP08 H2	800	100kA	65kA	50kA
MP12 H2	1200	100kA	65kA	50kA
MP16 H2	1600	100kA	65kA	50kA
MP20 H2	2000	100kA	75kA	75kA
MP25 H2	2500	100kA	75kA	75kA
MP30 H2	3000	100kA	75kA	75kA
MP40 H2	4000	125kA	100kA	100kA
MP50 H2	5000	125kA	100kA	100kA
MP63 H2	6300 ①	150kA	100kA	100kA

① not UL listed

ratings

type	ampere rating (A)	sensor ratings (A)
08	800	250-400-600-800
12	1200	800-1000-1200
16	1600	1200-1600
20	2000	1600-2000
25	2500	2000-2500
30	3000	2500-3000
32	3200	2500-3200
40	4000	2500-3000-4000
50	5000	4000-5000
63	6300	5000-6300

tropicalization

The standard moisture and fungus protection ensure normal operation under extreme ambient conditions. Masterpact® circuit breakers comply with T2 tropicalization (IEC standard 68-2-30); relative humidity 95% at 113°F (45°C) and 80% at 131°F (55°C) (hot, humid climate). Salt spray resistance as per IEC 68-2-11.

standard compliance

- UL489: MP08 to MP50 circuit breakers and their accessories are listed under UL files E63335, E103955 and E113555
- UL1066/ANSI: MC08 to MC50 circuit breakers are UL Listed according to UL1066 (ANSI C37-13) under file E161835
- international standards: the Masterpact® circuit breaker has been designed to meet all the major standards including:
 - IEC 947-2 and related standards such as VDE, BS, etc.

- JEC, JIS
- marine applications:
 - homologated by Bureau Veritas
 - approved by Det Norske Veritas and Germanische Lloyd's
 - listed by Lloyd's Register of Shipping
 - American Bureau of Shipping application
 - UL marine

other performances

The UL 489 and UL1066 (ANSI C37-13) standard performance assure that the circuit breaker has sufficient characteristics to be used in normal conditions. However,

UL1066/ANSI C37-13/NEMA SG3 ② type	rating (A)	480V	600V	short time
special interrupting rating				
MC08 N1	800	50kA	50kA	42kA
MC16 N1	1600	50kA	50kA	50kA
standard interrupting rating				
MC08 H1	800	65kA	65kA	50kA
MC16 H1	1600	65kA	65kA	50kA
MC20 H1	2000	65kA	65kA	65kA
MC32 H1	3200	65kA	65kA	65kA
MC40 H1	4000	100kA	100kA	100kA
MC50 H1	5000	100kA	100kA	100kA

② drawout only

the circuit breaker exceeds, without additional costs, the UL standard 1,500 operations required in endurance. The heavy duty mechanism and the contact design provide a mechanical endurance of 10,000 operations (approx.) without maintenance (see page 38).

single design up to 6300A

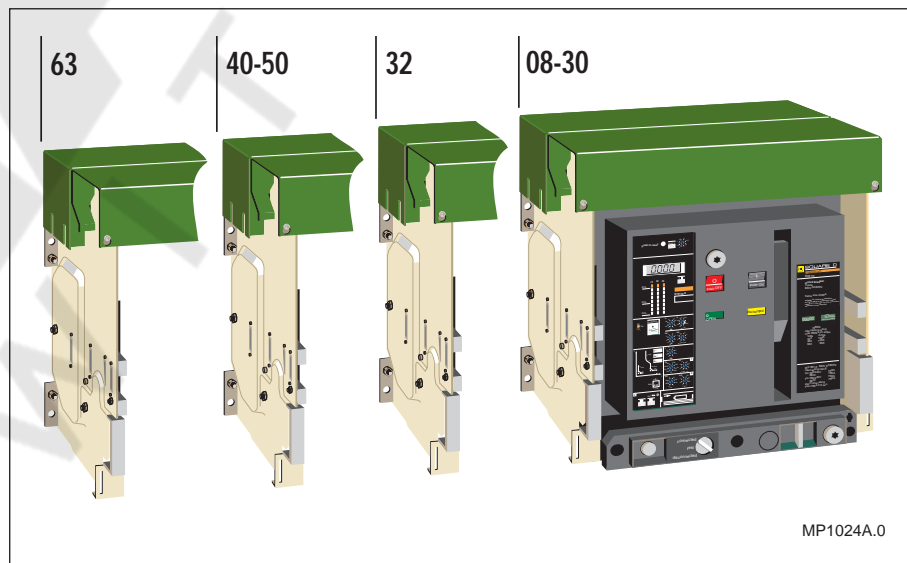
All frame sizes have been designed with the same technology featuring identical depth and door cutouts, and common control units and accessories.

high short-time current rating: up to 100kA for 1 sec.

The exceptional short-time rating of 75,000A in a 3000A frame and 100,000A in a 4000A frame and above allows the circuit breakers to be fully selective up to their interrupting ratings.

100% rated

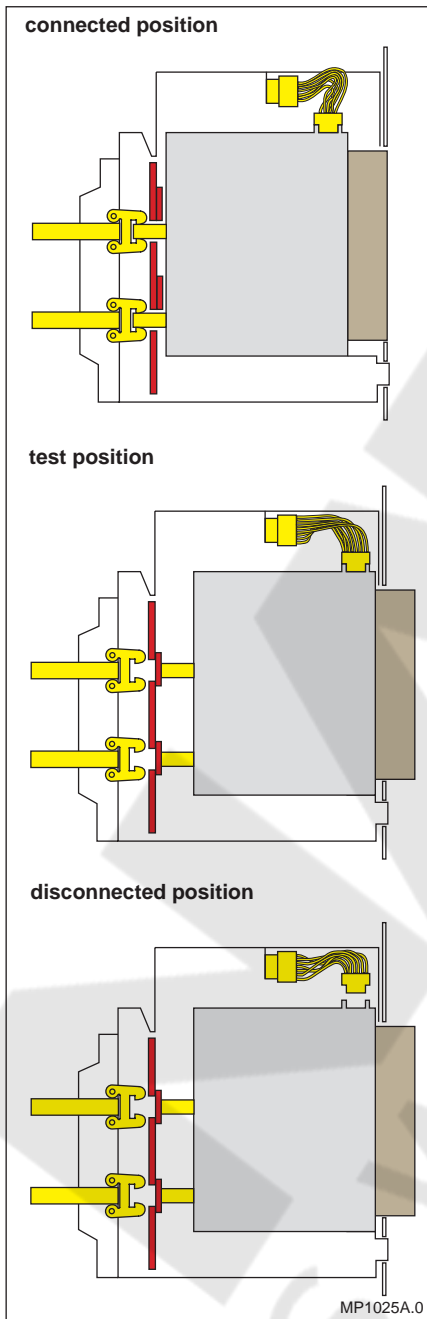
The circuit breakers are designed for continuous operation at 100% of their current rating.



Masterpact® circuit breaker advantages

drawout circuit breaker design

- the drawout assembly mechanism allows the circuit breaker to be racked in 4 positions (connected, test, disconnected and withdrawn).
- the closing and opening push buttons, the racking handle and racking mechanism are accessible through the front door cutout. Disconnecting the circuit breaker will be therefore possible without opening the door and accessing live parts. Safety shutters can be provided for protection from live parts when the circuit breaker is removed.

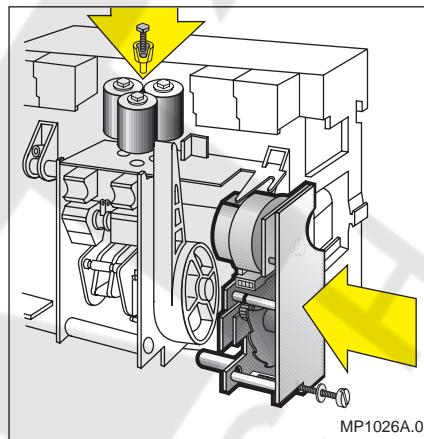


true 2-step stored energy mechanism

The closing time is less than 5 cycles. The circuit breaker is operated via a stored energy mechanism which can be manually or motor charged. Closing and opening operations can be initiated either from the local push buttons on the circuit breaker front face, or by remote control. O-C-O cycle is possible without recharging.

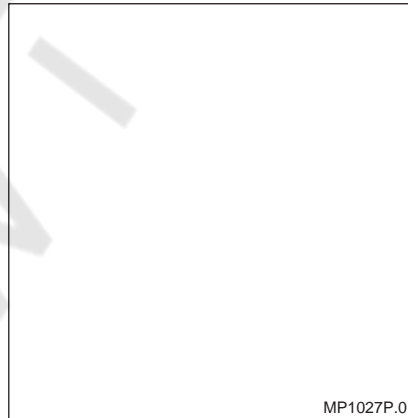
field-installable accessories

- as the installation develops and changes the circuit breaker can develop and change with it. Most accessories are field-installable, without losing the UL Listing mark, without any adjustment and with only the aid of a screwdriver.
- the uniform design of the circuit breaker line allows these accessories to be common for the whole line.



front connection of secondary circuits

All accessory terminals are located on a connecting block which is accessible from the front even with the circuit breaker in the test or disconnected position. This is particularly useful for field inspection and modification.



designed for no maintenance...

The circuit breaker has fewer parts (by a factor of at least 5) than conventional circuit breakers while performing the same functions. This leads to greatly enhanced reliability and reduction in maintenance. Under normal operating conditions, given by standards and controlled by tests, the circuit breaker does not require maintenance.

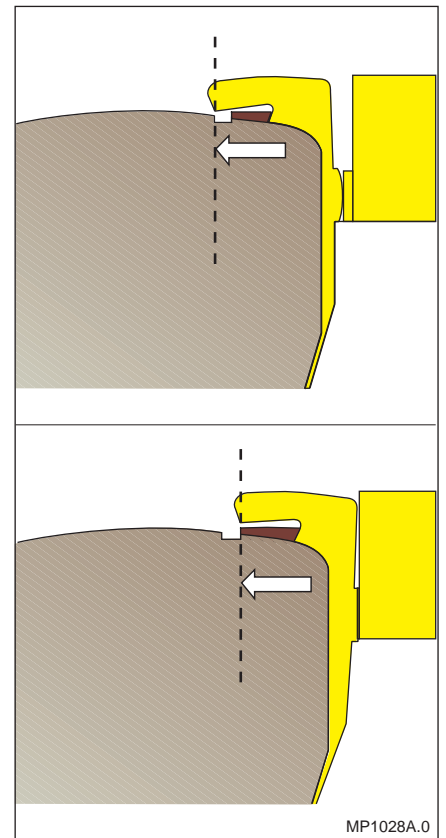
...but exceeds the standard with an easy and reduced maintenance

It is easy to remove the arc chutes and visually inspect the contacts and wear indicator. The operation counter (spring charging motor option) can also indicate when inspections and possible maintenance should be done.

After operating conditions exceeding those given by standards, it is possible to extend the circuit breaker life by:

- replacement of arc chutes and spring charging motor by the user.
- replacement of main contacts by an after sale service team.

Note: see page 37 for additional information.



Masterpact[®] circuit breaker advantages

improved features

■ segregated compartment

Once the front cover has been removed, giving access to the auxiliary compartment, the main contacts remain fully isolated. Furthermore, interphase partitioning allows full insulation between each pole even if the front cover has been removed.

■ isolation function by positive indication of contact status

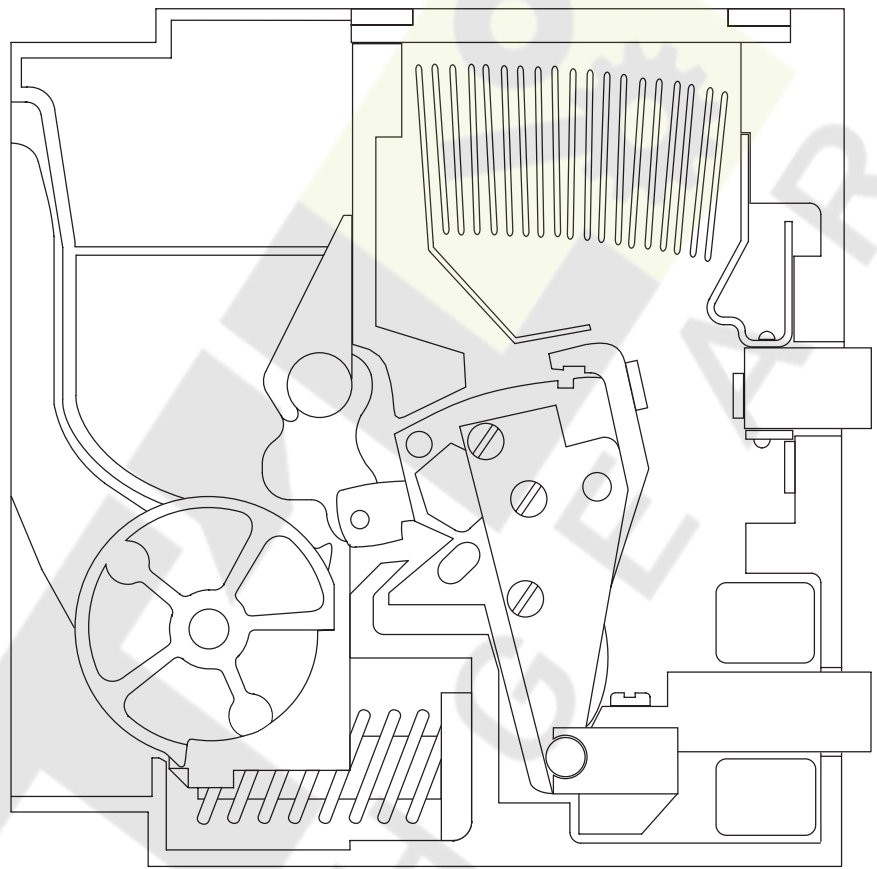
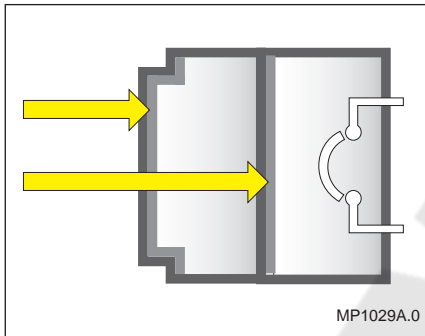
The mechanical indicator is truly representative of the status of all three main contacts.

■ reinforced insulation

Two insulation barriers separate the front of the circuit breaker from main circuits.

■ disconnecting through door

The racking handle and racking mechanism are accessible through the front door cutout. Disconnecting the circuit breaker will therefore be possible without opening the door and giving access to live parts.



state of the art protection and control

The circuit breaker can be equipped with a microprocessor-based, electronic control unit which provides all the traditional protection of the universal power circuit breaker (long-time, short-time, instantaneous and ground-fault) ^③ plus other built-in functions:

- rms sensing (standard)
- alarm switch (standard)
- overcurrent trip switch (standard)
- interchangeable rating plugs (standard)
- thermal memory and I²t ramp (standard on STR 38-58 control unit)
- defeatable instantaneous (standard on STR 38-58 control unit)
- zone-selective interlocking for ground fault and short time (option)
- current and load meter (option)
- load monitoring outputs (option)
- fault indicators (option)
- communication ability (option)

control units	STR 28D	STR 38S	STR 58U
basic features			
long-time ^①	setting	adjustable	adjustable
	delay	fixed	adjustable
short-time	pickup	adjustable	adjustable
	delay	adjustable	adjustable
instantaneous	adjustable	fixed ^②	adjustable ^②
test receptacle	standard	standard	standard
additional features			
ground-fault protection ^③		■	■
built-in ammeter	■	■	■
fault indicators		■	■
segregated alarm switch			■
zone-selective interlocking			■
load monitoring			■
communication outputs			■

^① long-time pickup at 1.1 current setting

^② defeatable on N1 and H1 types

^③ two types: residual sensing (T) or residual source ground return (W)

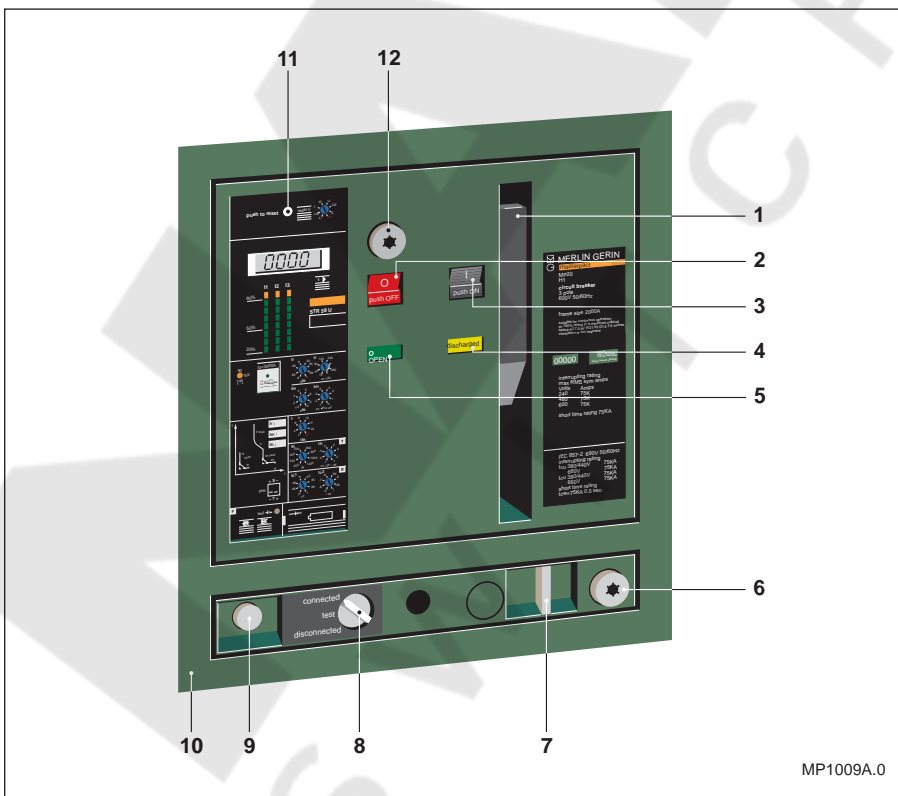
Masterpact® circuit breaker description



MP1031P.0

description

- 1 control terminal covers
- 2 accessories and control unit front connecting block
- 3 position carriage switches
- 4 arc chute
- 5 opening coils
- 6 spring charging motor
- 7 front cover
- 8 control unit
- 9 racking crank
- 10 handling handgrip
- 11 retractable rails
- 12 pull-out handgrip
- 13 safety shutters



MP1009A.0

front view

- 1 charging handle
- 2 manual opening push button
- 3 manual closing push button
- 4 stored energy mechanism status indicator (charged or discharged)
- 5 main contact position indicator (open or closed)
- 6 disconnected position locking (key interlock)
- 7 disconnected position padlocking
- 8 drawout position indicator showing that the circuit breaker is in the connected, test or disconnected position
- 9 racking crank housing
- 10 door escutcheon
- 11 fault indicator and reset button
- 12 open position locking (key interlock)